

Name of Faculty	:	Faculty of Science
Name of Program	:	Bachelor of Science
Course Code	:	1BSC01
Course Title	:	Inorganic Chemistry-I
Type of Course	:	Professional Core
Year of Introduction	:	2023-24

Prerequisite	:	Interest in learning all elements in periodic tables
Course Objective	:	It aims to provide students with a solid foundation in the key areas of inorganic chemistry, enabling them to understand the principles, properties, and applications of various elements and compounds. Actual course objectives may vary depending on the specific curriculum and institution.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Understand the fundamental concepts of atomic structure and the periodic table.
	CO2	Remember a deep understanding of coordination compounds, including nomenclature and isomerism.
	CO3	Acquire knowledge about the general properties and trends of main group elements.
	CO4	Explore the extraction methods and various applications of transition metals.

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	T	P	C	SEE	CIA	SEE	CIA	
3	0	2	4	50	25	50	25	150

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P - Practical, C - Credit, SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping WithCOs
1	Fundamentals of Inorganic Chemistry Atomic structure and periodicity Chemical bonding and molecular structure Classification of elements and periodic table Chemical reactions and stoichiometry	12	26.66%	CO1
2	Coordination Chemistry and Transition Elements Coordination compounds: nomenclature and isomerism Werner's theory and coordination numbers Ligands and their types Crystal field theory and color in coordination compounds	10	22.22%	CO2
3	Main Group Elements General properties of main group elements Hydrogen and its compounds Alkali and alkaline earth metals Boron and carbon families Nitrogen and oxygen families	11	24.44%	CO3
4	Chemistry of d-Block Elements Electronic configuration and properties of transition metals Magnetic properties and spectral properties Complex formation and stability constants Extraction and applications of transition metals	12	26.66%	CO4

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	25	25	-	25	25	-

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Suggested List of Experiments / Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	Qualitative analysis of given unknown Inorganic compound	
	i. KCl	02
	ii. NaCl	02
	iii. NaOH	02
	iv. K ₂ Cr ₂ O ₇	02
	v. K ₂ CrO ₄	02
	vi. CaCl ₂	02
	vii. KBr	02
	viii. CdCl ₂	02
	ix. SrCl ₂	02
	x. KI	02
	xi. NaNO ₂	02
	xii. NaNO ₃	02
	xiii. CaCO ₃	02
	xiv. KOH	02
xv. CuCl ₂	02	

Major Equipment/Instruments and Software Required

Sr. No.	Name of Major Equipment / Instruments and Software
1	Test tubes
2	Test tube stand
3	Beakers
4	Funnel
5	Pair of tongs
6	Glass rod
7	Test tube holder

Suggested Learning Websites

Sr. No.	Name of Website
1	https://nptel.ac.in/courses/104101090
2	https://nptel.ac.in/courses/104101093
3	https://nptel.ac.in/courses/104101121

Reference Books

Sr. No.	Name of Reference Books
1	Encyclopedia of Inorganic Chemistry by R. Bruce King
2	Handbook of Inorganic Chemicals by Pradyot Patnaik
3	Inorganic Chemistry by Shriver and Atkins
4	Advanced Inorganic Chemistry by Cotton and Wilkinson
5	Advanced Inorganic Chemistry - Vol. 2 by Prakash Satya
6	Advanced Inorganic Chemistry-Vol.-II" by Gurdeep Raj
7	Graduate Inorganic Chemistry - III" by B R Puri
8	Concise Inorganic Chemistry" by J. D. Lee
9	Inorganic Chemistry" by E Keiter and R Keiter